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EDITORIAL.

THE GENERAL ignorance regarding the essential processes of plant life is appalling. If one were to ask the persons he met in a walk what trees lived on and how they secured their food, the answers received would doubtless be more curious than edifying. It would probably be a safe venture to assert that not one college graduate in one hundred can give a clear statement of vegetable nutrition, assimilation and respiration. And yet the college graduate has doubtless had the best opportunity of any class of persons to become informed upon subjects like these. The fact is that some of the most generally interesting topics relating to plants, those which bring plants into a more intimate relation with animals as living, active beings, have not yet received due recognition from general educators, or even from botanical teachers themselves. No one can accuse American botanists of being slow or of lack of enthusiasm, but having been absorbed in assorting the rich material of the native flora, in working out the life histories of the lower forms, and in studying minute structures by the newly developed staining and embedding methods, there has seemed to be no room and time for the consideration of other topics. But no one who has watched the course of the science elsewhere, or even at home, can doubt that the day for physiology to be the dominant subject in American botanical thought is not far off. When that day arrives, we may expect it to be more absorbing and more revolutionary of previous ways of thinking, than any of the recent waves that have disturbed the even tenor of botanical progress. It is to be hoped, indeed, that, besides the changes which may be effected in the course of thought within the botanical domain, this wave may be sufficiently powerful to beat high upon the rock bound coast of popular ignorance. Such a change in sentiment might give the opportunity to establish a new set of ideas regarding matters of physiology.

CURRENT LITERATURE.

Recent Systematic Papers.

CONTRIBUTIONS FROM THE NATIONAL HERBARIUM.—The first volume of this series of contributions is continued by the appearance of no. 4, issued June 30, 1891. It is the work of Mr. J. N. Rose, Assistant Botanist, and treats of the collections of plants made by Dr. Edward Palmer, in 1890, in western Mexico and Arizona. The collection from Alamos and vicinity proved to be a very rich one, no less than 45 new

species being described in the paper. Ten of them are illustrated by full page or large folded plates. A new genus of Leguminosæ, *Willardia*, is proposed for a species that Dr. Watson referred doubtfully to *Coursetia*, as *C. Mexicana*. To give any notion of the nearly half a hundred new species is impossible in this brief review. The contribution, however, is creditable to the Division, and the chief Botanist deserves congratulation for the organization and promotion of this kind of work. There are some blemishes in matters of detail and a few marked inconsistencies between drawings and descriptions.

WATSON'S CONTRIBUTIONS.—Dr. Sereno Watson's "Contributions to American Botany, XVIII" is before us, appearing in Proceedings of American Academy, xxvi, 124-163. Part 1 contains the description of eight new species, chiefly from the United States, and a revision of the American species of *Erythronium*. Thirteen species of *Erythronium* are recognized, but one of which is new, although *E. mesochoreum* Knerr may be considered as such. Part 2 contains the descriptions of new Mexican species from the Pringle collections of 1889 and 1890. Among the 88 new species there described, two new genera appear, viz.: *Neopringlea*, to replace the preoccupied *Llavea*, a genus usually placed with the Celastraceæ, but whose affinities are shown to be in the Sapindaceæ; and *Oligonema* (now *Golionema*), a genus of homochromous Asteroideæ. Part 3 is concerned with a wild species of *Zea* from Mexico, described under the name *Z. canina*. At first thought to be the original wild state of our cultivated maize, Dr. Watson now considers it a distinct species. Part 4 contains some notes upon a collection of plants from the Island of Ascension, including three new species, a *Rubus*, an *Asplenium*, and a *Nephrodium*.

SUPPLEMENTING the above is Mr. B. L. Robinson's "Contribution from the Gray Herbarium," in the same volume of Proceedings of the American Academy, pp. 164-176. It contains descriptions of new plants from the Pringle collections of 1889 and 1890, twenty-six species, chiefly Gamopetalæ, being established.

PROF. F. LAMSON-SCRIBNER has just issued a paper (Proceedings of Philadelphia Academy, 1891, 292-309) treating of the Mexican grasses collected by Pringle in 1890, and also by an expedition in the same year from the Philadelphia Academy. Pringle's grasses number thirty-six species, three of which (*Muhlenbergia*) are new, although a good deal of synonymy is corrected. The paper contains a full page plate and two cuts in the text.

MR. THOS. MORONG has published notes on the North American Halorageæ which appear as a reprint from the *Bulletin of the Torrey Botanical Club*, 18, 229-246. *Hippuris* is made to contain three species.

Callitriche is credited with eleven, one of which, *C. longipedunculata*, is a new species from S. California. Proserpinaca includes two species; while Myriophyllum contains twelve. In the last genus *M. ambiguum*, var. *limosum* Nutt. becomes *M. humile* (Raf.), and *M. scabratum* Michx. becomes *M. pinnatum* (Walt.)

MR. A. P. MORGAN has issued the fourth paper in his series on North American Fungi, being a reprint from the *Journal of the Cincinnati Society of Natural History*, April, 1891. It treats of the genus Lycoperdon, which is made to contain thirty-one species, two of which are new. The paper is illustrated by two plates.

Minor Notices.

MR. J. S. CHAMBERLAIN has been making a comparative study of the styles of Compositæ. His paper containing 22 pp. and four plates, is issued as a reprint from the *Bulletin of the Torrey Botanical Club*, xviii, 175. Mr. Chamberlain concludes that while style characters are very useful in the classification of tribes, they cannot be relied upon entirely.

AN ENLARGED and greatly improved edition of Woolls' "Plants indigenous and naturalized in the neighborhood of Sydney" has just been issued. The plants are arranged according to the system of Baron F. von Mueller. The species of vascular plants number 1465, of which 175 are naturalized.

A VERY VALUABLE contribution to the literature of Geographical Botany is the paper just published by Mr. Warren Upham in *Proceedings of the Boston Society of Natural History*, 25, 145-172, entitled, "Geographic limits of species of plants in the basin of the Red River of the North." Mr. Upham's extensive investigations into the glaciology of that region, combined with his botanical training, have well fitted him to discuss the relation of plant distribution and migration to climate.

THE ANNUAL REPORT of the Geological Survey of Arkansas for 1888 has just appeared. Half of the report is devoted to a list of the plants of Arkansas, together with some general discussion of the state flora, by John C. Branner and F. V. Coville. The list does not pretend to speak of geographical distribution, but any fairly complete list of plants from Arkansas is of interest.

PROF. CONWAY MACMILLAN has distributed a reprint of his article in the *Revue général de Botanique*, on the European plants which have been introduced into the valley of Minnesota.